## CLAIMS

What is claimed is:

1. A method for treating cancer comprising:
   a) administering to a host a composition containing a tumor antigen, fragment thereof or nucleic acid encoding the tumor antigen such that the host develops an immune response against the tumor antigen; and,
   b) subsequently administering to the host a high dose of a cytokine;
   whereby the combination of steps a) and b) provides an enhanced T cell response in the host relative to that which occurs following step a) alone.
2. The method of claim 1 wherein the tumor antigen is administered as a polypeptide or peptide.
3. The method of claim 1 wherein the composition comprises a nucleic acid encoding a tumor antigen.
4. The method of claim 3 wherein the nucleic acid is contained within a plasmid or a viral vector.
5. The method of claim 4 wherein the viral vector is selected from the group consisting of poxvirus, adenovirus, retrovirus, herpesvirus, and adeno-associated virus.
6. The method of claim 5 wherein the viral vector is a poxvirus selected from the group consisting of vaccinia, NYVAC, MVA, avipox, canarypox, ALVAC, ALVAC(2), fowlpox, and TROVAC.
7. The method of claim 6 wherein the viral vector is a poxvirus selected from the group consisting of NYVAC, ALVAC, and ALVAC(2).
8. The method of claim 1 wherein the cytokine is IFN.
9. The method of claim 8 wherein the cytokine is IFN-α.
10. The method of claim 9 wherein the cytokine is IFN-α2b.
11. The method of claim 1 wherein the tumor antigen is selected from the group consisting of gp100, MART-1/Melan A, gp75/TRP-1, tyrosinase, NY-ESO-1, melanoma proteoglycan, a MAGE antigen, a BAGE antigen, a GAGE antigen, RAGE antigen, N-acetylglucosaminyltransferase-V, p15, ß-catenin, MUM-1, cyclin dependent kinase-4, p21-*ras*, BCR-*abl*, p53, p185 HER2/neu, epidermal growth factor receptor, carcinoembryonic antigen, modified carcinoembryonic antigen,

carcinoma-associated mutated mucins, an Epstein Barr Virus EBNA gene product, papilloma virus E7, papilloma virus E6, prostate specific antigen, prostate specific membrane antigen, KSA, kinesin 2, HIP-55, TGFβ-1 anti-apoptotic factor, tumor protein D52, H1FT, an NY-BR antigen, fragments thereof, and derivatives thereof.

12. The method of claim 11 wherein the tumor antigen is selected from the group consisting of gp100, MAGE-1, MAGE-2, MAGE-3, MAGE-4, MAGE-6, MAGE-12, MAGE-51, GAGE-1, GAGE-2, RAGE-1, NY-BR-1, NY-BR-62, NY-BR-75, NY-BR-85, NY-BR-87, and NY-BR-96.

13. The method of claim 12 wherein the tumor antigen is gp100.

14. The method of claim 1 wherein the composition comprises an poxviral vector encoding a tumor antigen or a fragment thereof and the cytokine is a T cell activating cytokine.

15. The method of claim 14 wherein poxviral vector is an ALVAC vector and the T cell activating cytokine is IFN.

16. The method of claim 15 wherein the T cell activating cytokine is IFNα.

17. The method of claim 16 wherein the T cell activating cytokine is IFNα2b.

18. The method of claim 17 wherein IFNα2b is administered at at least 10 MU/$m^2$/d IV at least two times per week for at least two weeks.

19. The method of claim 18 wherein IFNα2b is administered at at least 10 MU/$m^2$/d IV at least three times per week for at least two weeks.

20. The method of claim 19 wherein IFNα2b is administered at at least 10 MU/$m^2$/d IV at least four times per week for at least two weeks.

21. The method of claim 20 wherein IFNα2b is administered at at least 10 MU/$m^2$/d IV at least five times per week for at least two weeks.

22. The method of claim 21 wherein IFNα2b is administered at at least 20 MU/$m^2$/d IV at least five times per week for at least four weeks.